

The background of the slide is a solid dark blue. It is decorated with white line art. In the top half, there are several stylized human figures in various poses, some with arms raised, and numerous small squares of different sizes scattered around them. In the bottom half, there are more stylized human figures, some appearing to be in motion or interacting, and more small squares scattered throughout.

ALIBER

LO QUE NADIE VE DONDE TODOS MIRAN

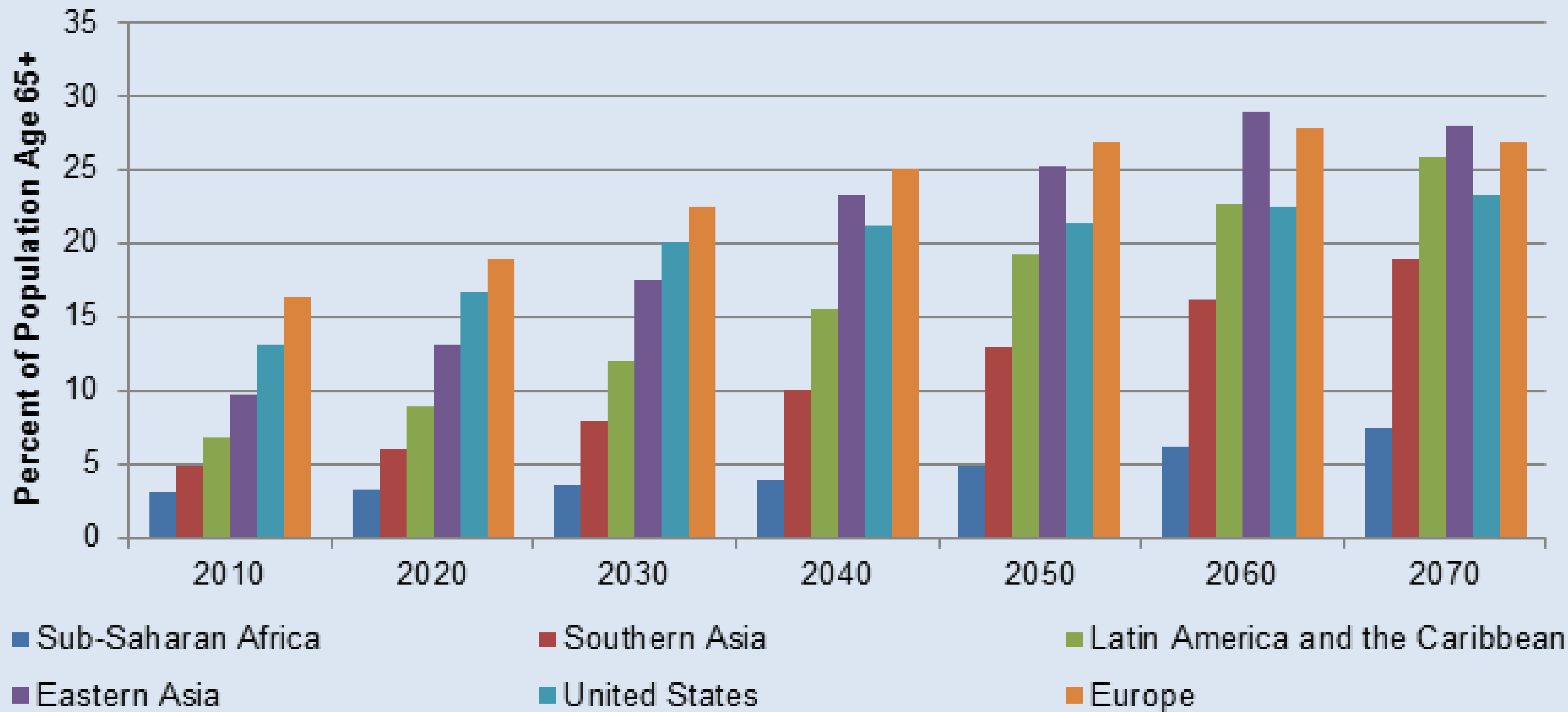
**“La innovación en nutrición personalizada:
avances relacionados con salud y
longevidad”**

Jose M Ordovas

www.hnrca.tufts.edu

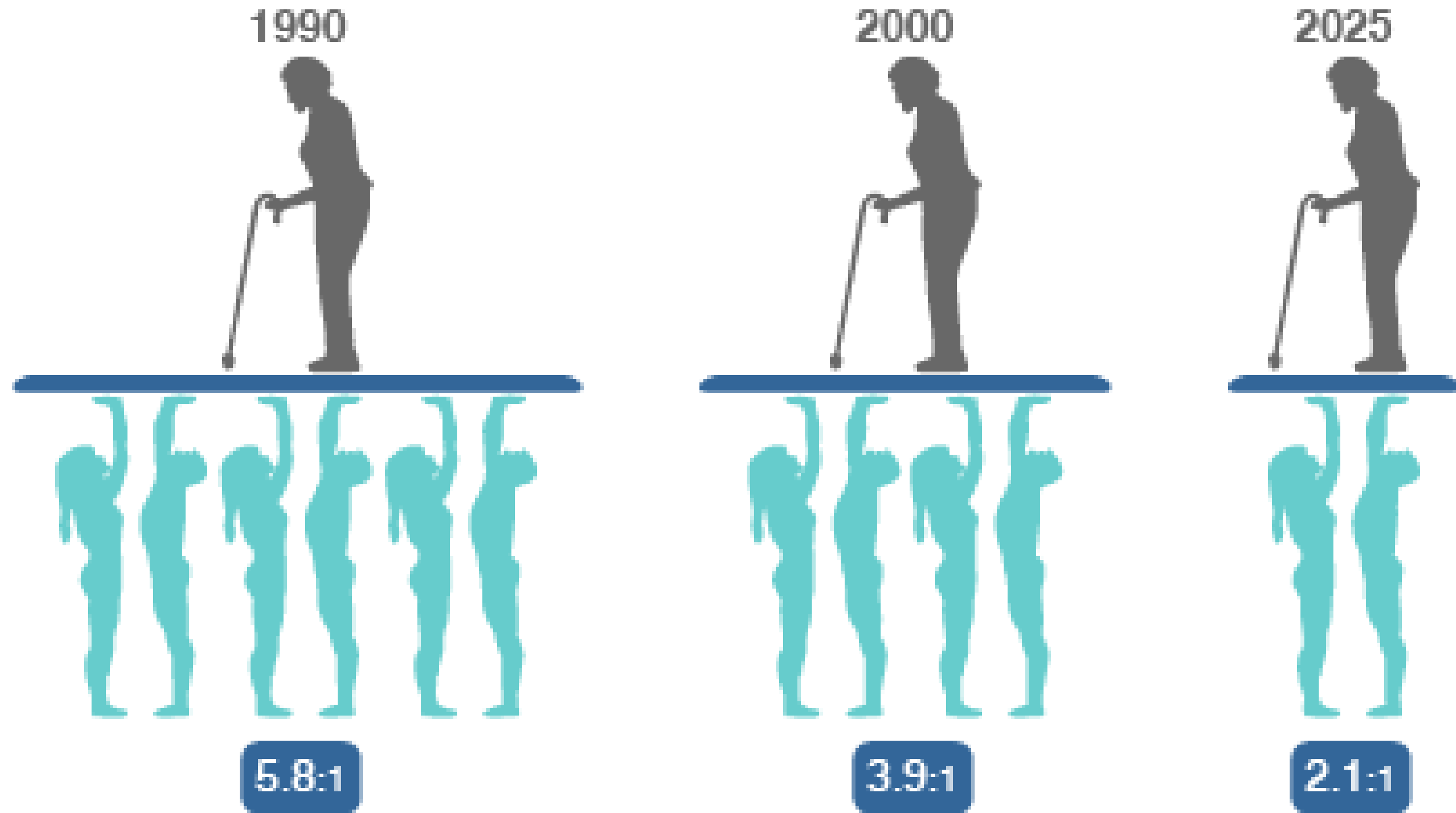


Population 65+ by Region



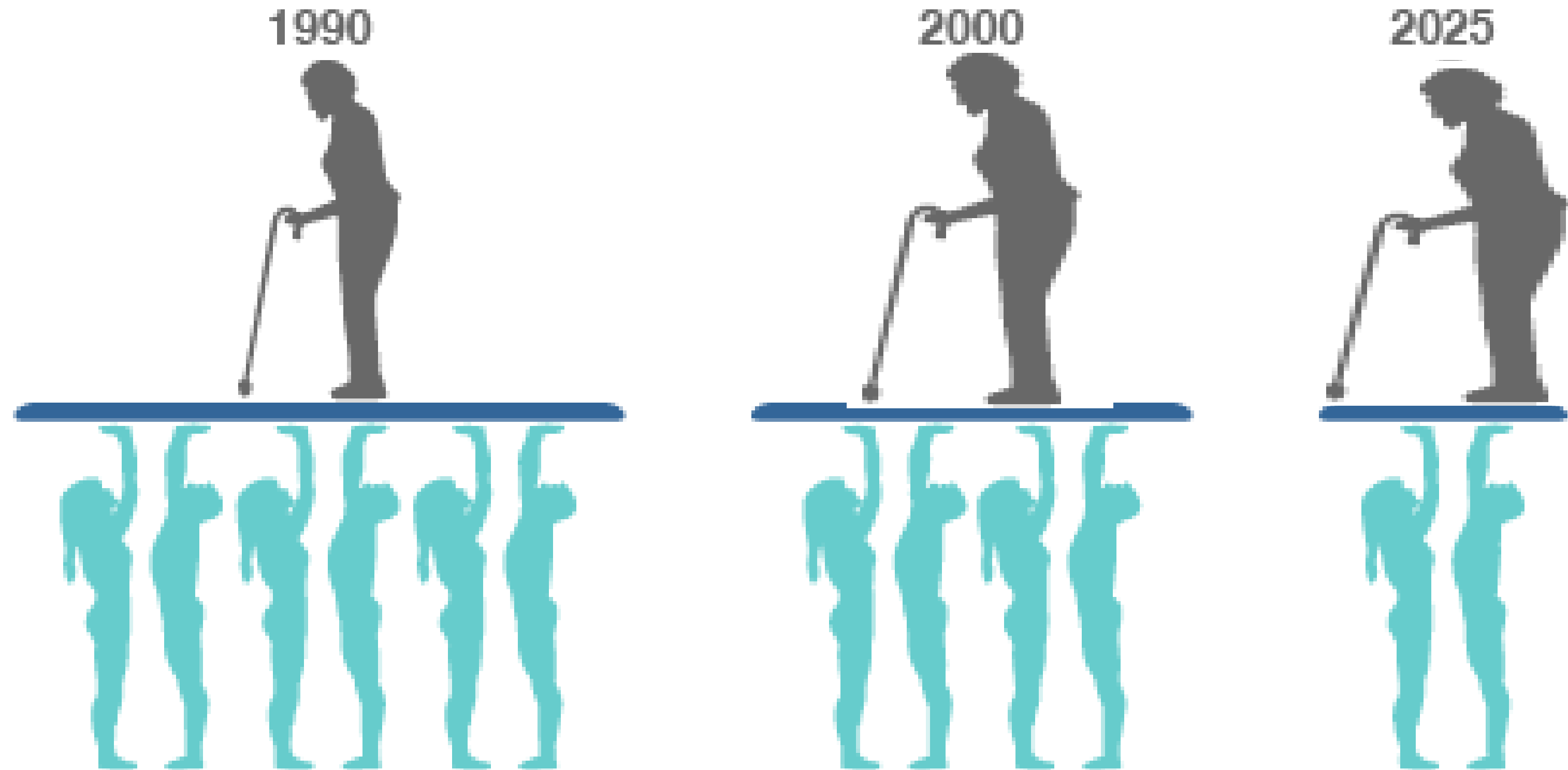


RATIO OF WORKERS TO PENSIONERS



Traditionally, the old-age dependency ratio, OADR (the number of people aged over 65 to people of working age), was used to assess the burden to society of supporting elderly people.

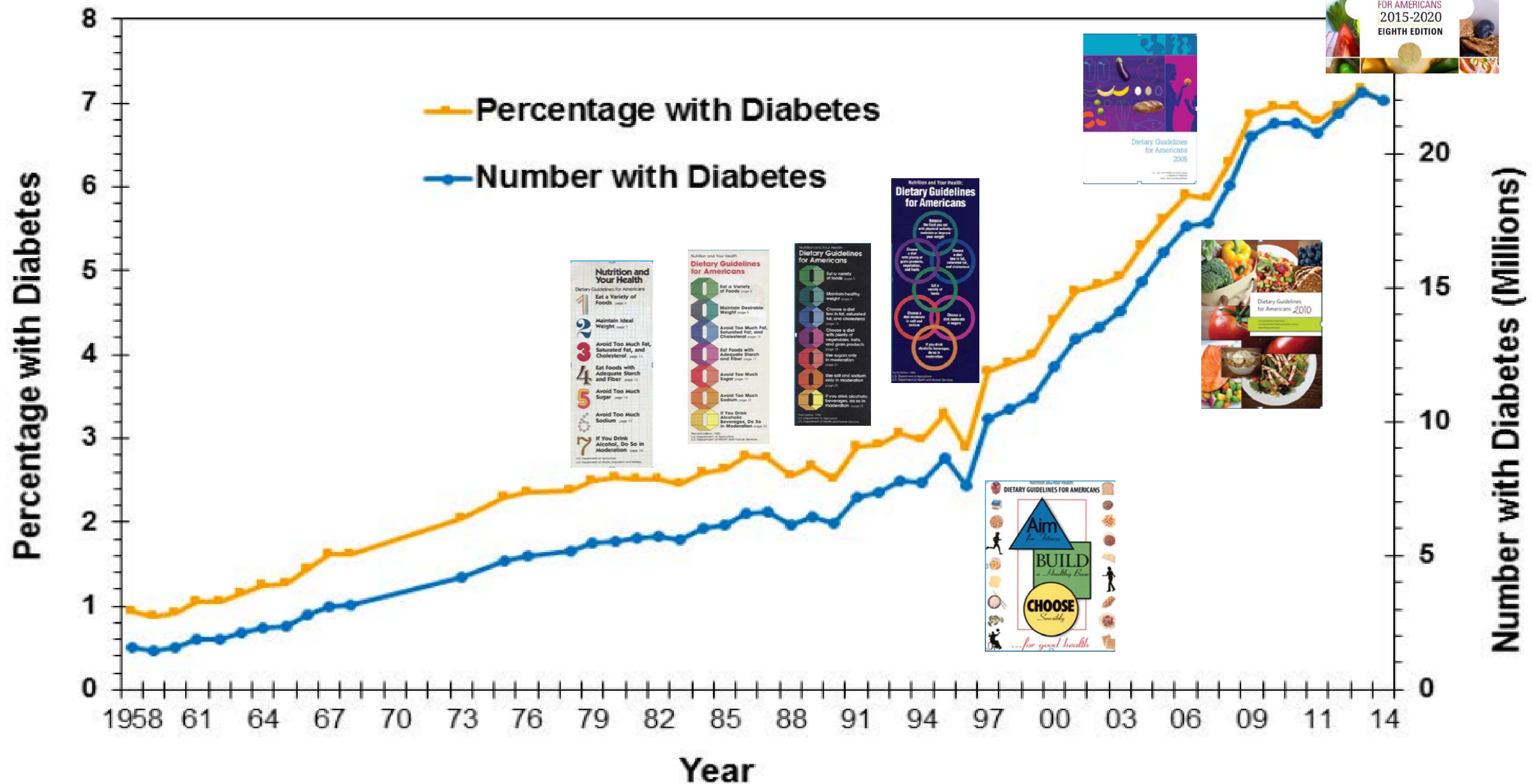
RATIO OF WORKERS TO PENSIONERS



A new dependency measure is called adult disability dependency ratio, or ADDR. It is based on disabilities that reflect the relationship between those who need care and those who are capable of giving it.

Some facts about life and death

- More people are living longer.
- More people are living with chronic diseases such as type 2 diabetes, obesity, cardiovascular diseases, arthritis, chronic respiratory diseases, and cancers.
- These currently account for 63% of annual global deaths.
- It has been estimated that, by not smoking, being physically active, and adhering to a healthy dietary pattern, 80% of the premature death resulting from these diseases could be prevented.





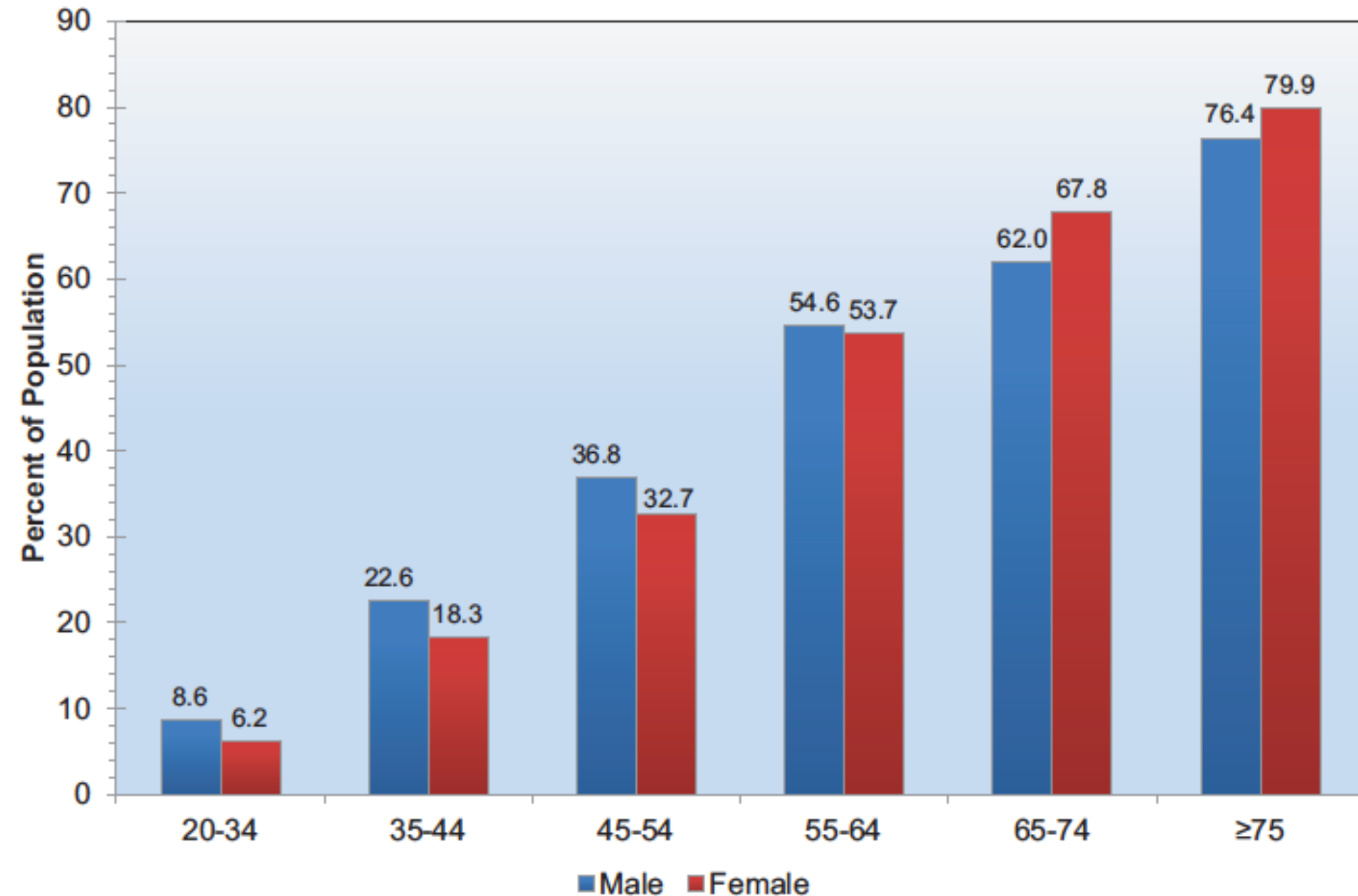
Precision (Personalized) Nutrition





Global Burden of Hypertension

- In 2000, it was estimated that 972 million adults worldwide had hypertension.
- HBP went from being the fourth-leading risk factor in 1990, as quantified by DALYs, to being the number 1 risk factor in 2010.
- Because of population growth and aging, the number of people worldwide with **uncontrolled hypertension** (SBP $\geq$ 140 mm Hg or DBP $\geq$ 90 mm Hg) increased from 605 million to 978 million between 1980 and 2008

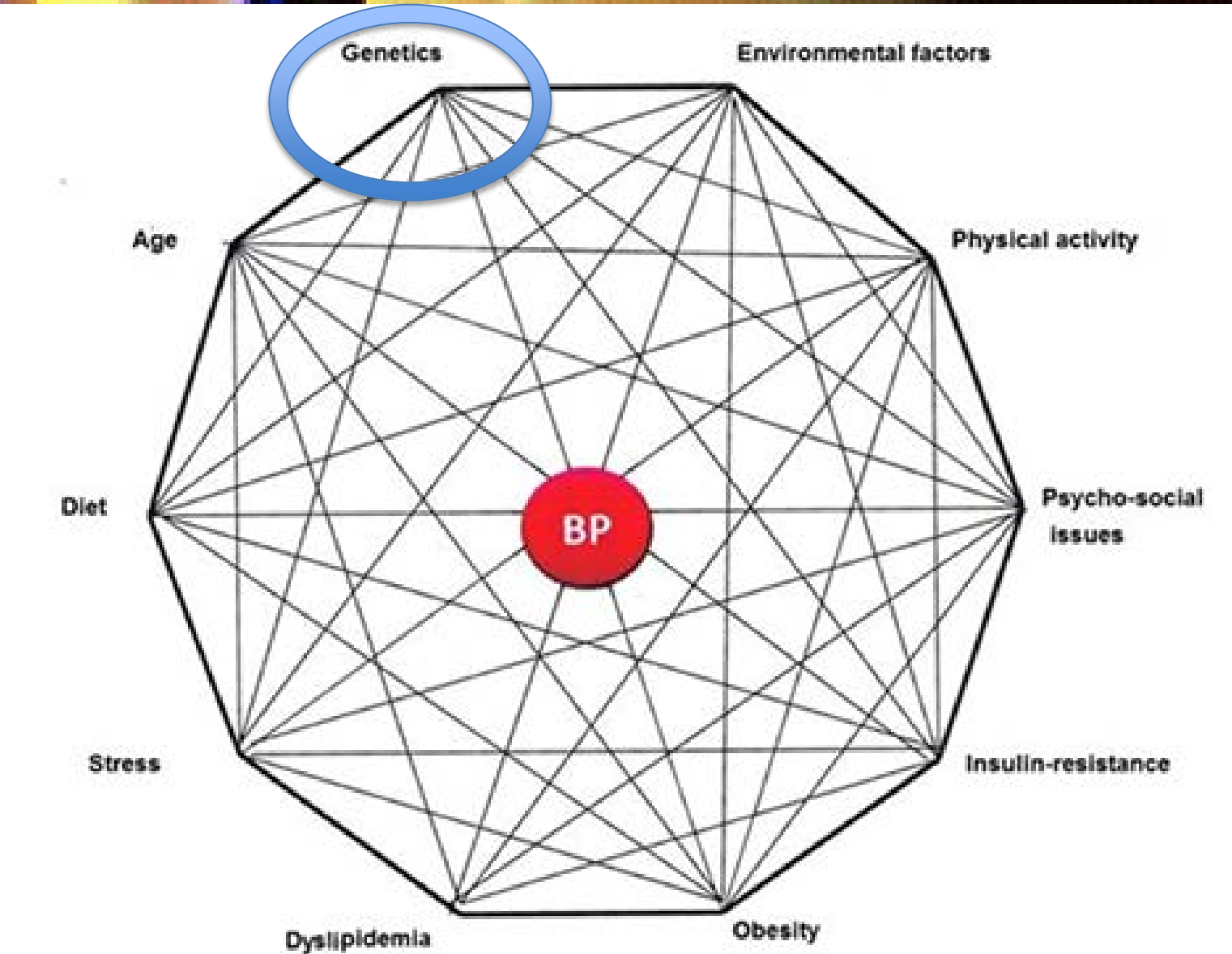


Lifestyle factors are the best way to address high blood pressure.

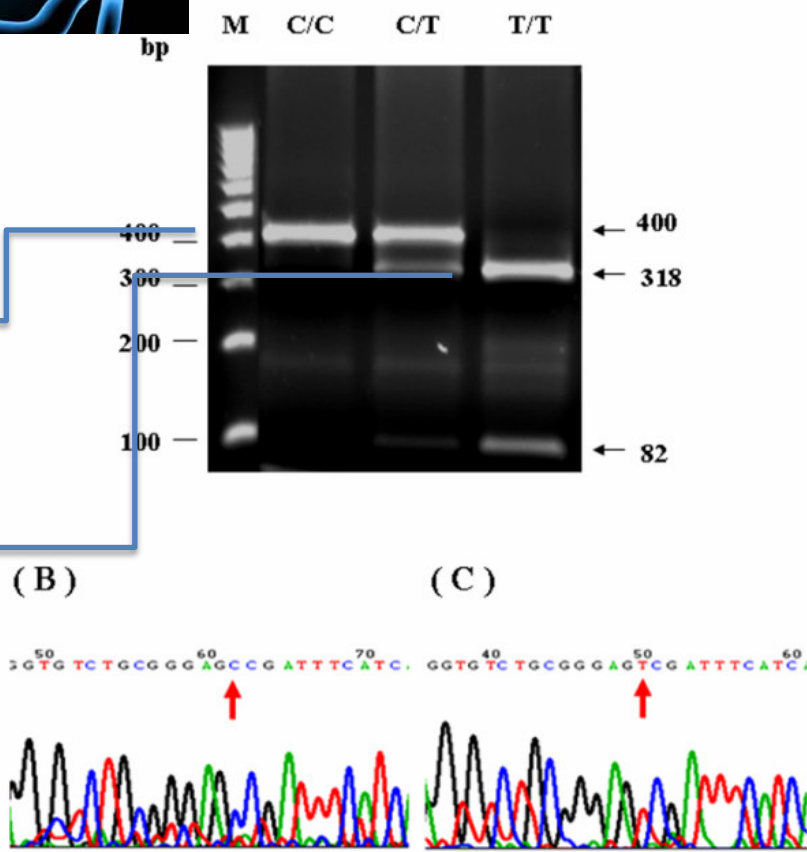
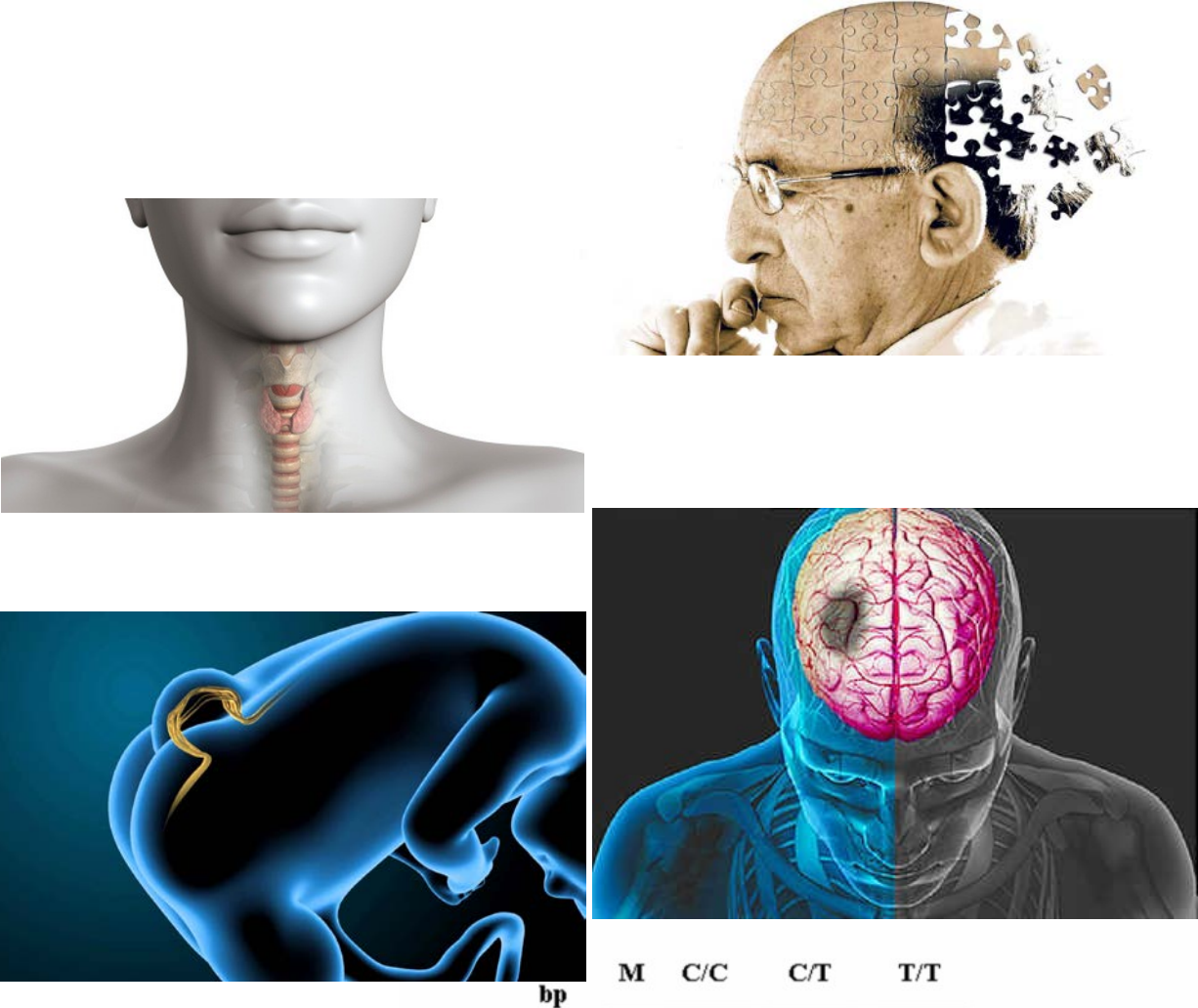
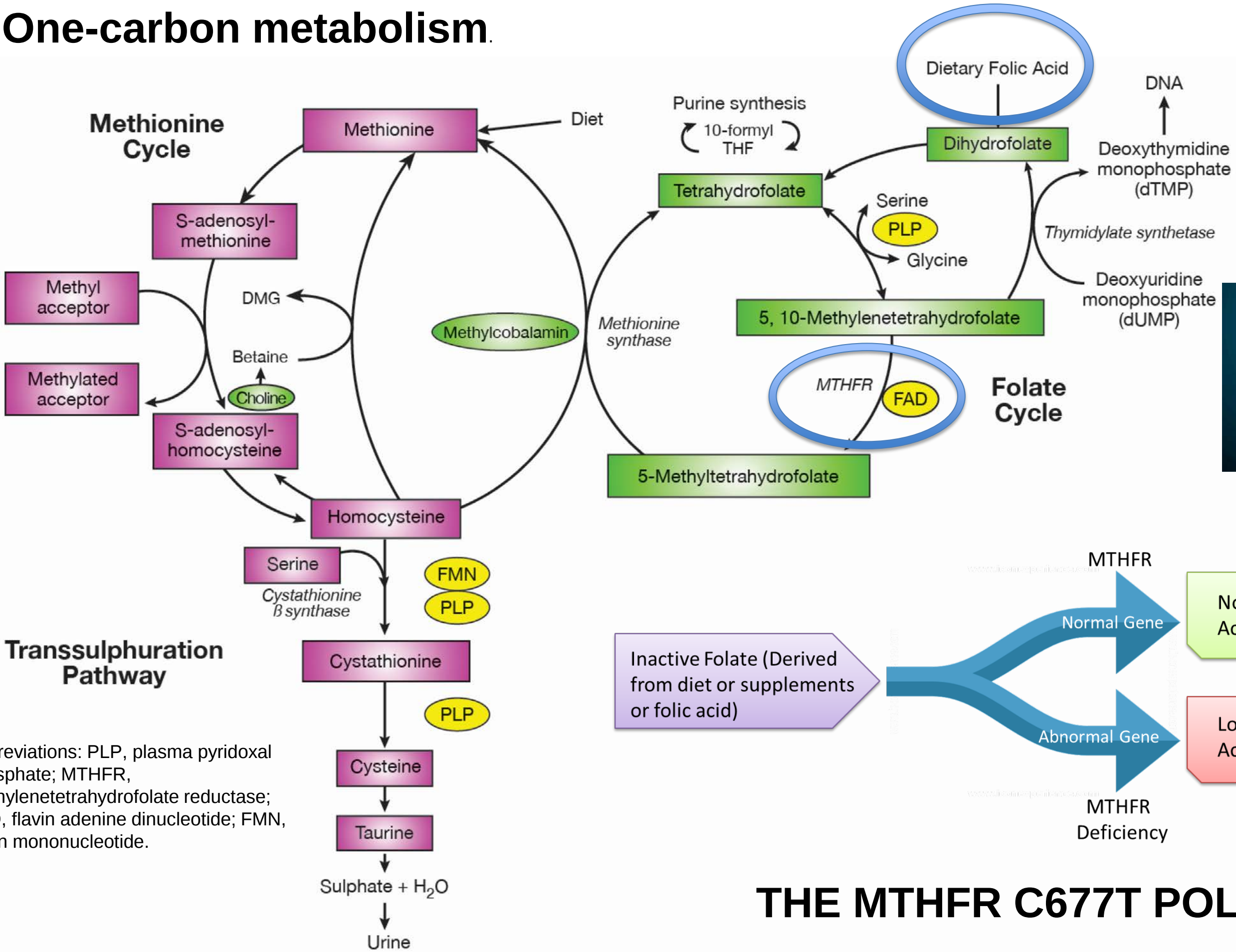
But in reality most people end up taking a range of antihypertensive drugs:

- diuretics, including thiazides, chlorthalidone, and indapamide
- angiotensin-converting enzyme (ACE) inhibitors
- beta-blockers and alpha-blockers
- calcium-channel blockers
- central agonists
- peripheral adrenergic inhibitor
- vasodilators
- angiotensin receptor blockers



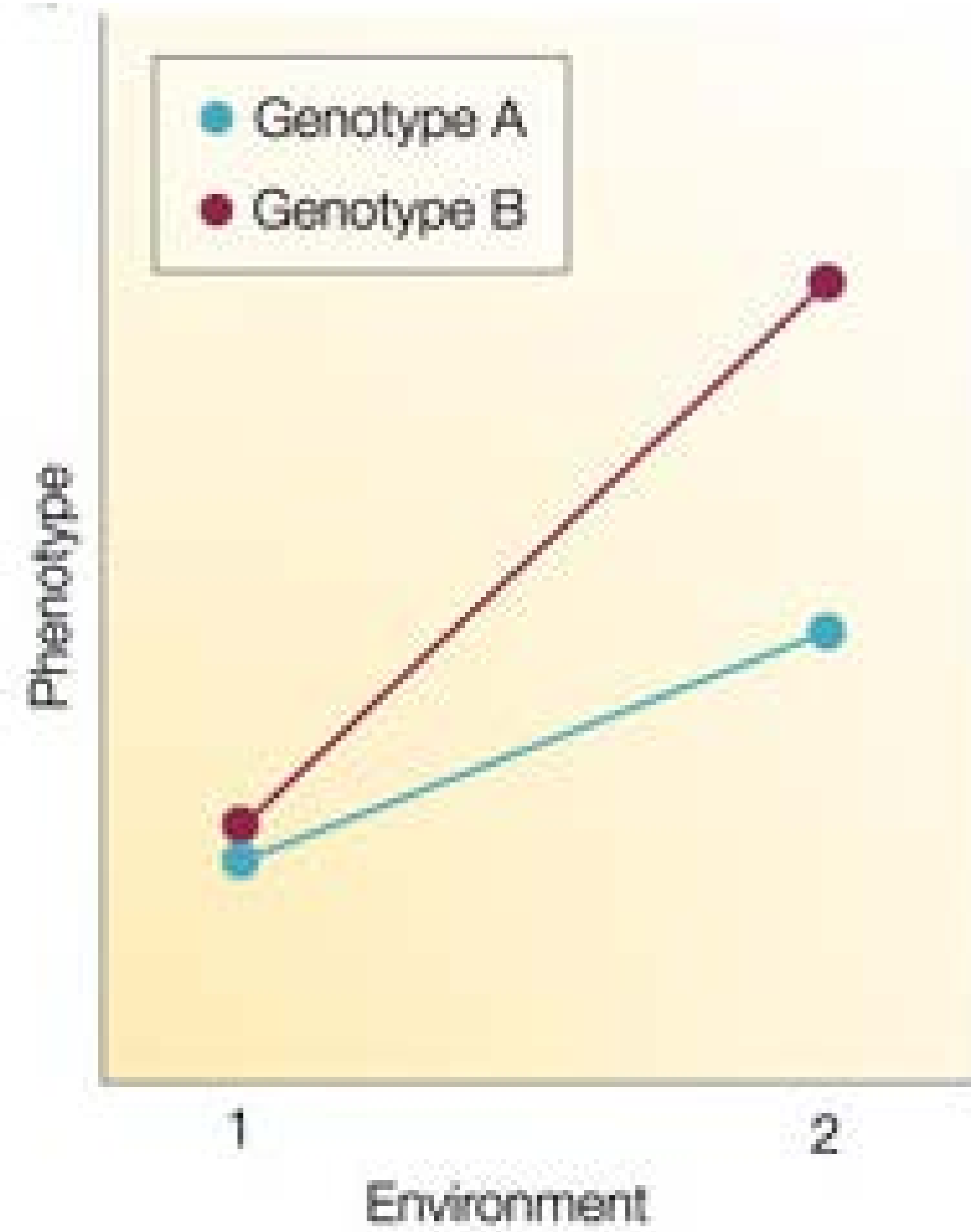
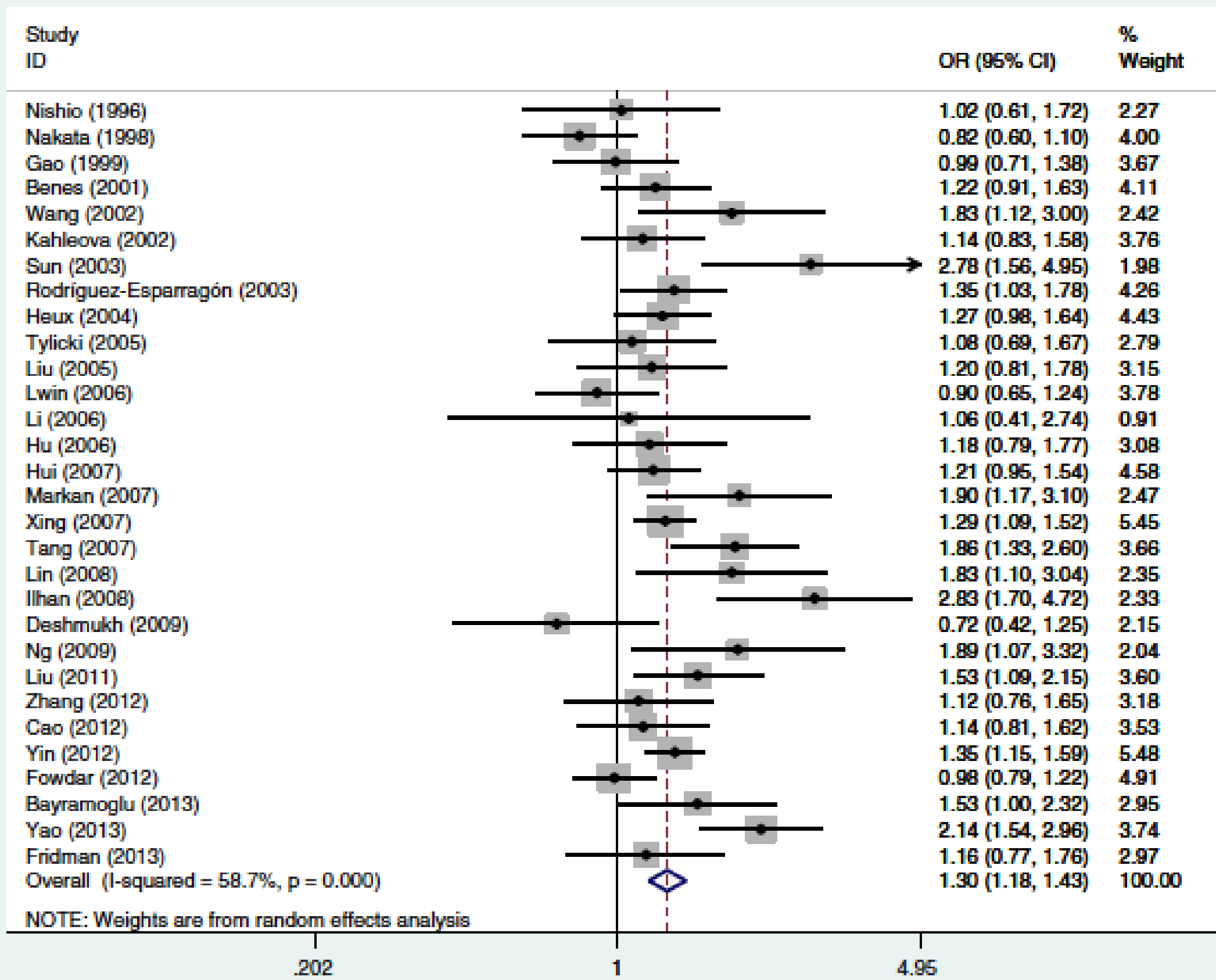


One-carbon metabolism.

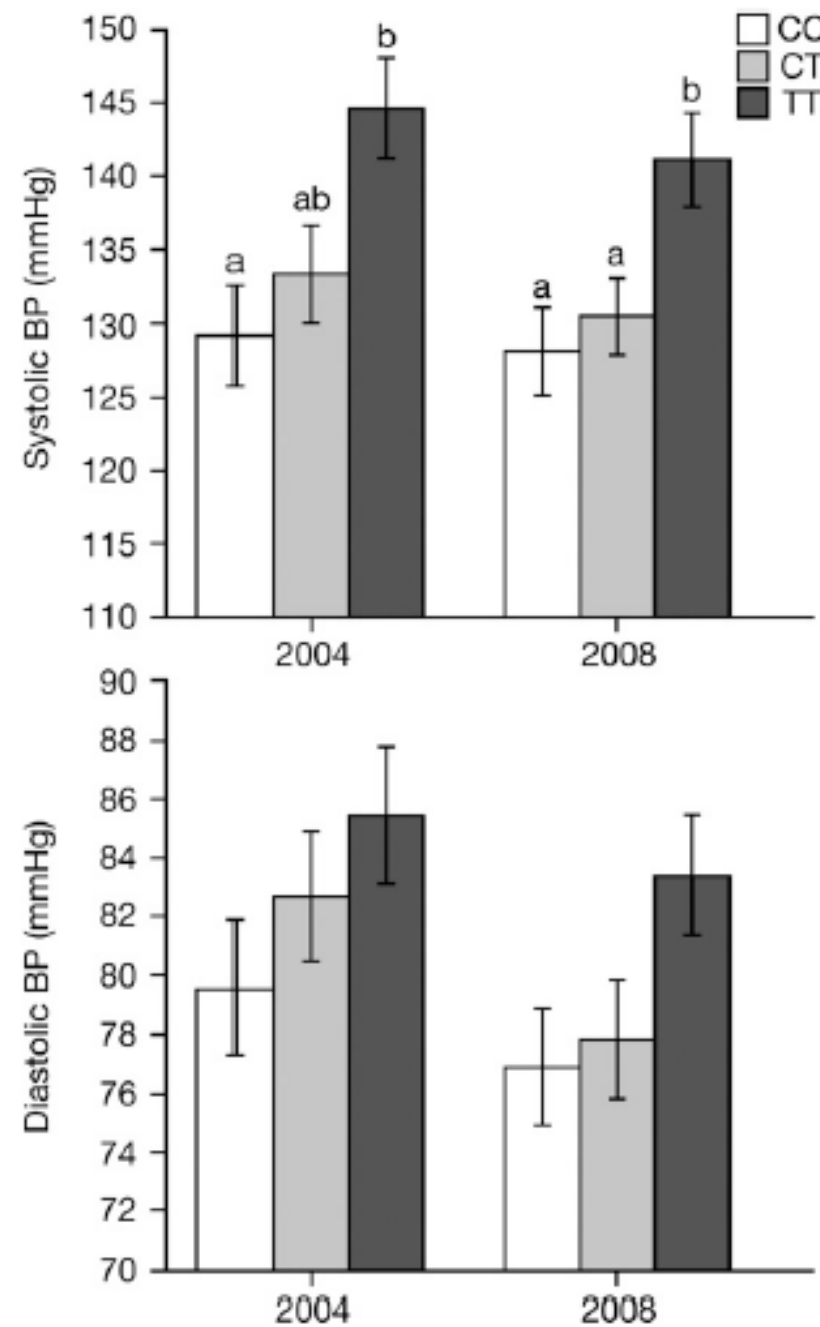


THE MTHFR C677T POLYMORPHISM

MTHFR C677T polymorphism and essential hypertension

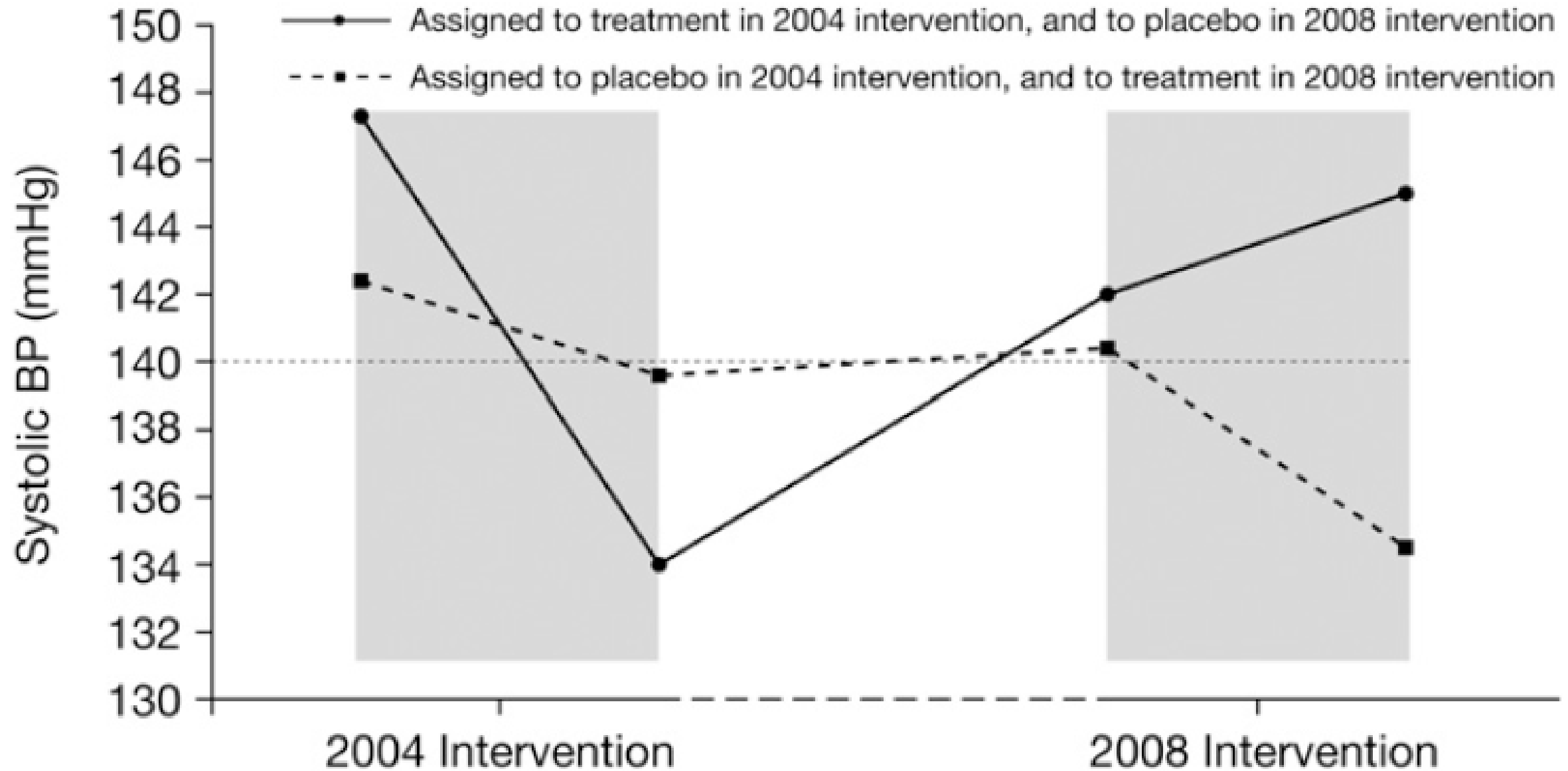


Riboflavin offers a targeted strategy for managing hypertension in patients with the MTHFR 677TT genotype: a 4-y follow-up



Mean (SEM) SBP and DBP in 2004 and 2008 by MTHFR 677C/T genotype.

Wilson CP, et al. Am J Clin Nutr. 2012;95:766-72.



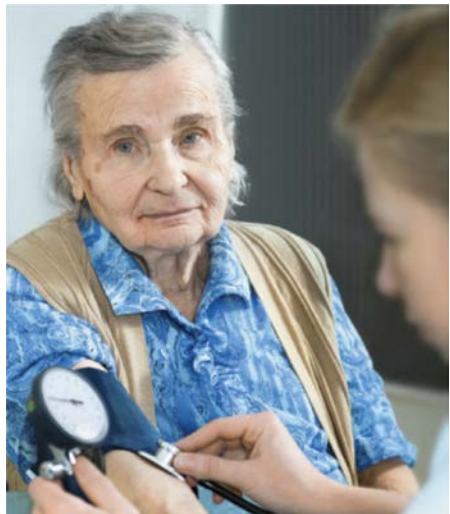
Systolic BP response to intervention (crossover) with riboflavin in patients with the MTHFR 677TT genotype.

The shaded area denotes riboflavin intervention periods (1.6 mg/d for 16 wk); The dotted line indicates the suggested clinical goal for systolic BP of 140 mm Hg

Concurrent antihypertensive drugs included up to 4 medications per subject.

Benefits of precision nutrition at different ages and conditions

BORN MTHFR C677T (TT)



Prevention of hypertension

Prevention of Preeclampsia

Therapy to reach blood pressure targets



Risks to You

- Seizures
- Stroke
- Organ damage
- Death

Risks to Your Baby

- Premature birth
- Death

Signs of Preeclampsia

Stomach pain

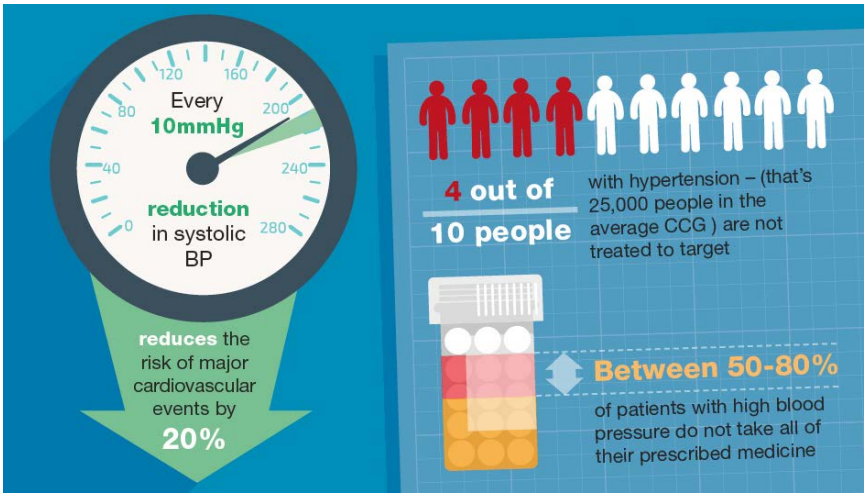
Headaches

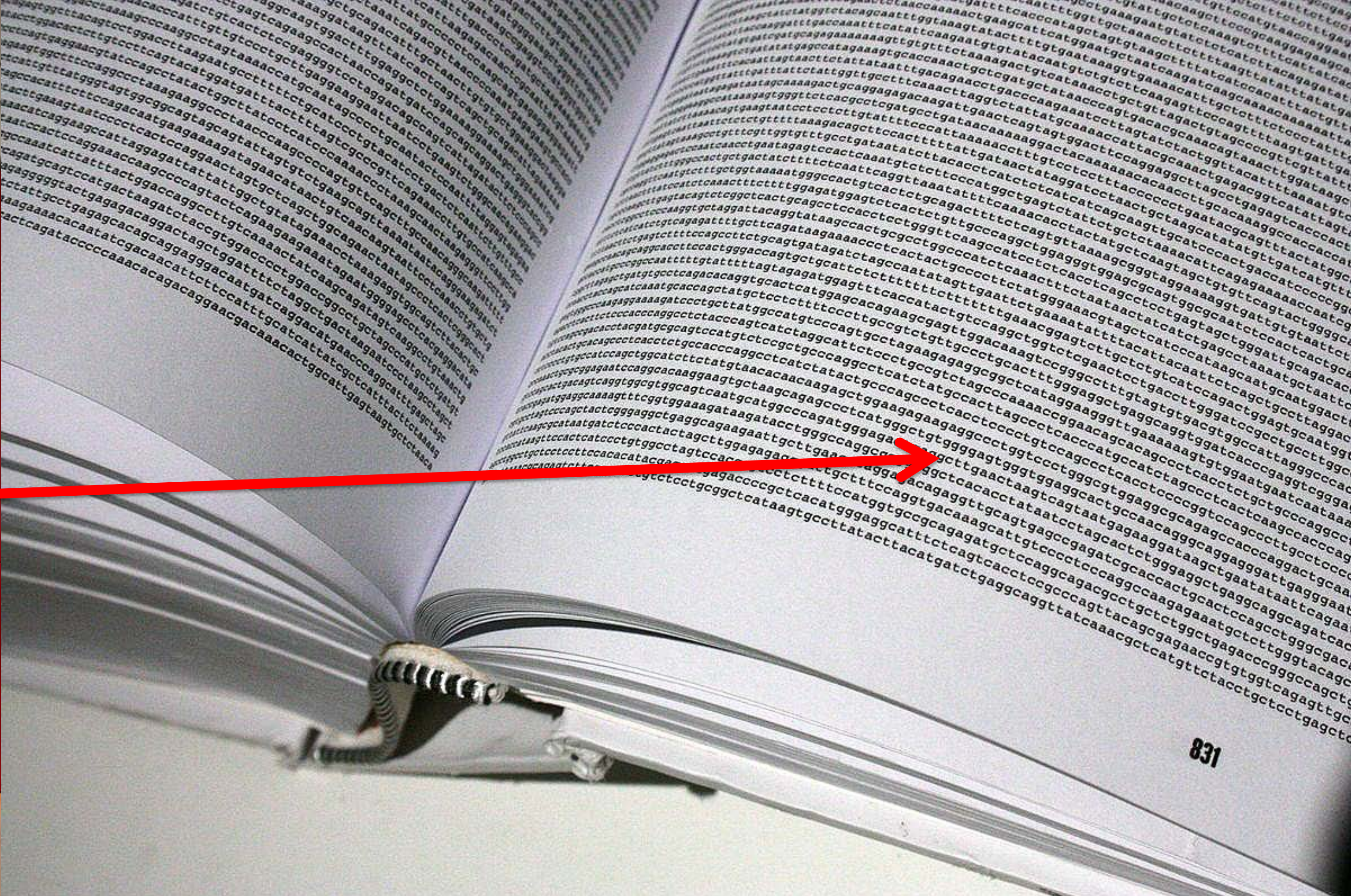
Feeling nauseous; throwing up

Seeing spots

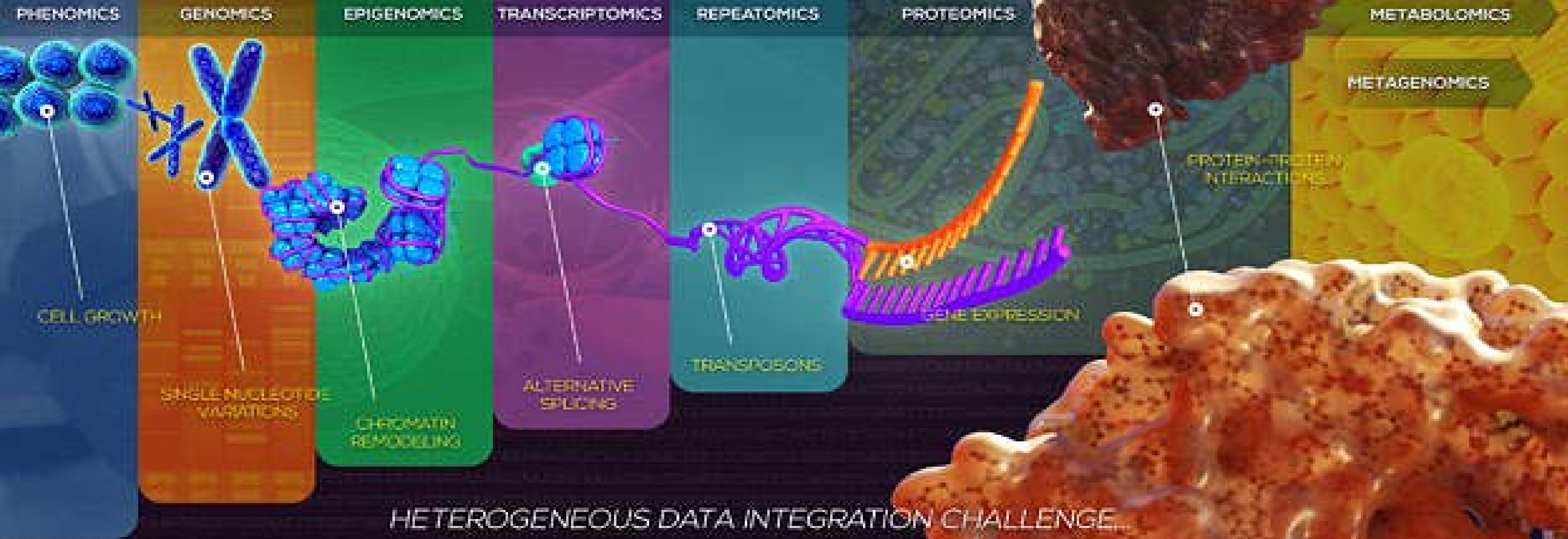
Swelling in your hands and face

Gaining more than 5 pounds in a week





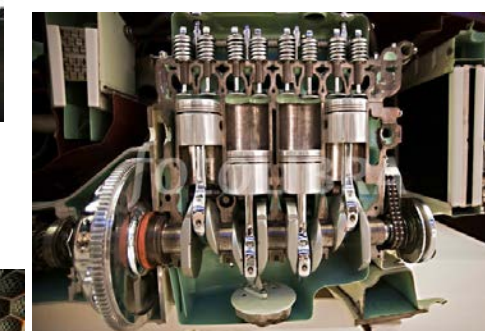
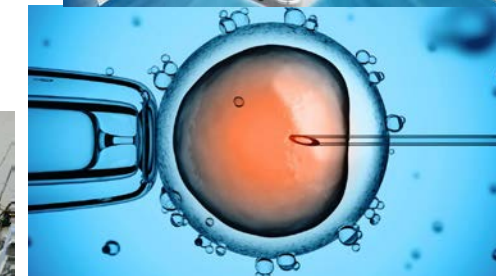
MULTIOMICS



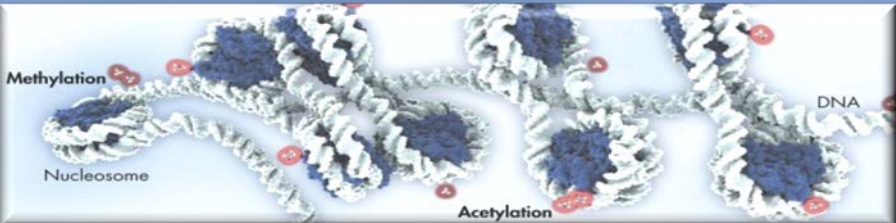
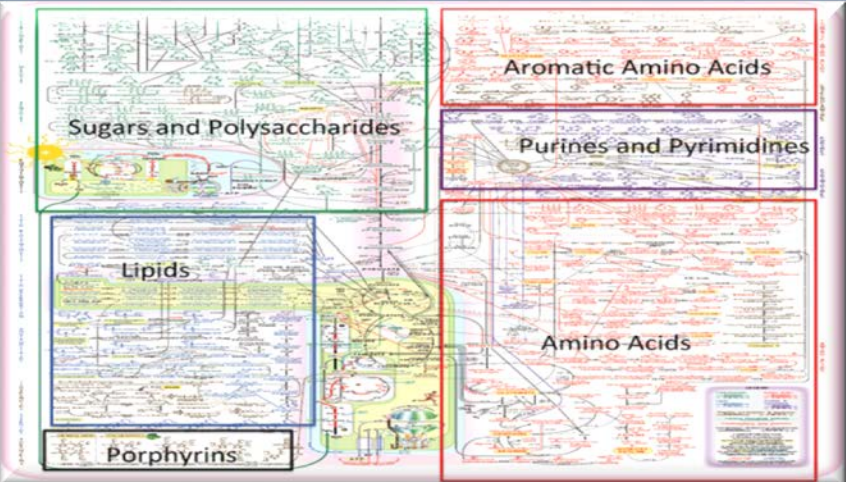
Daunting Task!

Other (Supposedly) Impossible Scientific Achievements

- Heavier-Than-Air Flight
- Space Exploration
- Computers and the Internet
- Bioengineering
- Nuclear Technologies
- The Internal Combustion Engine
- Nanotechnology
- The Human Genome Project



Personalized Nutrition



!Gracias!

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ALIBER

LO QUE NADIE VE DONDE TODOS MIRAN

